

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

To:	STEVEN'S HEWLETT & PERKINS BRISTOL
WILKINSON, Stephen John STEVEN'S HEWLETT & PERKINS 1 St. Augustine's Place Bristol BS1 4UD GRANDE BRETAGNE	- 7 APR 2004
DIA	
FILE No.	

Date of mailing (day/month/year)	02.04.2004
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Applicant's or agent's file reference SJW/9185 WO		IMPORTANT NOTIFICATION	
International application No. PCT/EP 03/00668	International filing date (day/month/year) 23.01.2003	Priority date (day/month/year) 24.01.2002	
Applicant CERESTAR HOLDING B.V. et al.			

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl
Fax: +31 70 340 - 3016

Authorized Officer

Janzing, M

Tel. +31 70 340-4140



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INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

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Applicant's or agent's file reference SJW/9185 WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/00668	International filing date (day/month/year) 23.01.2003	Priority date (day/month/year) 24.01.2002
International Patent Classification (IPC) or both national classification and IPC A23L1/0522, A23L1/0522		
Applicant CERESTAR HOLDING B.V. et al.		


1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 06.06.2003	Date of completion of this report 02.04.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Vuillamy, V Telephone No. +31 70 340-3504



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No.

PCT/EP 03/00668

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

Description, Pages

1-3, 5-11 as originally filed
4, 4a received on 25.02.2004 with letter of 25.02.2004

Claims, Numbers

1-9 received on 25.02.2004 with letter of 25.02.2004

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 03/00668**

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-9
	No: Claims	
Inventive step (IS)	Yes: Claims	1-9
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP 03/00668

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D0: Statutory Instrument,
1995, n°3187

D1: EP-A-811633

Remarks - The term '*stabilized ... as herein before defined*' of claims 1, 5, 6, 8 is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claims unclear (Article 6 PCT).

This term has been interpreted as '*stabilized ... with active chlorine*' as disclosed on p.4, last paragraph.

V.1. None of the available prior art discloses UHT-treated products comprising starch alkenyl succinate stabilized with active chlorine.

V.2. The closest prior art D0 discloses the use of several compounds (ia starch sodium octenyl succinate) as authorized additives in pasteurized, sterilized or UHT treated products.

The present invention differs by the selection of a specific stabilizer (a starch alkenyl succinate stabilized with active chlorine) and a specific heat-treatment (UHT).

The problem to be solve is regarded as the provision of a heat-treated, sterilized product having a relative low viscosity after heat-treatment, but displaying an increased viscosity when re-heated. This problem is solved by the specific starch used in combination with a UHT treatment.

Although the low viscosity after UHT and high-viscosity after re-heating is an inherent feature of the starch alkenyl succinate, the skilled person would not find any incentive in D0 to select, for UHT products, this particular compound in the list disclosed in D0, for solving the above problem. The skilled person would further not regard the products of D1 (starches stabilized with active chlorine) as suitable for solving this problem, since D1 does not mention UHT treatments, and is directed to products maintaining a high-viscosity upon (repeated) heating or cooling.

The current invention further relates to the use of starch n-alkenyl succinate as texturising agent in UHT-treated product and especially to the use of stabilised starch alkenyl succinate as texturising agent in UHT-treated products.

The present invention further relates to the use of starch n-alkenyl succinate in UHT-treated products and viscosity of said UHT-treated product is between 0.10 to 0.50 times the viscosity obtainable after re-heating of said UHT-treated product.

The current invention further relates to the use in UHT-treated products selected from the group consisting of sauces, soups, liquid desserts, dressings and fillings.

Furthermore, the present invention describes the use of starch n-alkenyl succinate as texturising agent in UHT-treated product wherein egg yolk content of said product is reduced with at least 50% by adding starch n-alkenyl succinate, preferably stabilised starch alkenyl succinate.

Detailed description of the invention

The present invention relates to a UHT-treated product comprising starch n-alkenyl succinate as texturising agent wherein stabilised starch n-alkenyl succinate is stabilised starch alkenyl succinate as hereinafter defined and said UHT-treated product has after UHT-treatment a viscosity which is between 0.10 to 0.50 times the viscosity obtainable after re-heating of said UHT-treated product, preferably between 0.15 to 0.40 times the viscosity obtainable after re-heating.

The starch used in the present invention may be from a variety of sources such as corn, waxy maize, potato, pea, rice, wheat, cassava (tapioca), sorghum, and the like, preferably waxy maize and tapioca.

The starch n-alkenyl succinate is characterised by the chain length of the alkenyl-group and by the substitution degree of n-alkenyl succinate on starch. Alkenyl can be from C₆ to C₁₆, preferably C₈ (octenyl), and the substitution degree varies between 0.2 to 3%, preferably between 0.5 to 2.5%. This substitution degree is determined by HPLC.

The starch alkenyl succinate is undextrinised, dextrinised, cooked-up or pregelatinised, enzyme-treated or stabilised and/or mixtures thereof.

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By the term "stabilised starch n-alkenyl succinate" we mean starch n-alkenyl succinate treated with active chlorine, which may be prepared according to the process described in EP 0811633.

CLAIMS

1. A UHT-treated product comprising starch n-alkenyl succinate as texturising agent characterised in that said starch n-alkenyl succinate is stabilised starch alkenyl succinate as herein before defined and the viscosity of said UHT-treated product is between 0.10 to 0.50 times the viscosity of re-heated UHT-treated product.
2. A UHT-treated product according to claim 1 characterised in that the viscosity of said UHT-treated product is between 0.15 to 0.40 times the viscosity of re-heated UHT-treated product.
3. A UHT-treated product according to claim 1 characterised in that viscosity of said UHT-treated product is between 0.15 to 0.35 times the viscosity of re-heated UHT-treated product.
4. A UHT-treated product according to any one of claims 1 to 3 characterised in that said product is selected from the group consisting of UHT-treated sauces, soups, liquid desserts, dressings and fillings.
5. A UHT-treated white sauce according to claim 4 characterised in that:
 - a) it comprises from 2 to 5% w/w stabilised starch n-alkenyl succinate as herein before defined, preferably from 3 to 4% w/w stabilised starch n-alkenyl succinate,
 - b) its viscosity after UHT treatment is below 1500 mPa.s, preferably below 1000 mPa.s,
 - c) its viscosity after re-heating increases above 2000 mPa.s, preferably above 2200 mPa.s.
6. A process for preparing UHT-treated product comprising stabilised starch n-alkenyl succinate as herein before defined and said process is comprising the following steps:
 - a) Preparing the mix of the ingredients,

- b) Preheating said mix to a temperature higher than 50°C, preferably to a temperature up to 75°C,
 - c) Homogenising said preheated mix at a pressure higher than 20 bar,
 - d) Treating the mix by UHT at a temperature higher than 120°C, and
 - e) Cooling of UHT-treated product.
7. A process according to claim 6 characterised in that the UHT-treated product of step e) is re-heated to a temperature higher than 80°C, preferably higher than 90°C.
8. Use of stabilised starch *n*-alkenyl succinate as herein before defined as texturising agent in UHT-treated product and characterised in that the viscosity of UHT-treated product is between 0.10 to 0.50 times the viscosity of re-heated UHT-treated product.
9. Use according to claim 8 characterised in that said UHT-treated product is selected from the group consisting of sauces, soups, liquid desserts, dressings and fillings.